

ABSTRACT

SURFACE-MODIFIED WICK FOR DIAGNOSTIC TEST STRIP

A wicking material is disclosed that exhibits a horizontal wicking velocity of at least about 1.0 millimeter per second when contacted with a physiological fluid such as blood, lymph or cellular interstitial fluid. This high wicking rate is achieved by means of treatment of a fibrous wicking material candidate with a low temperature gas plasma, particularly a glow discharge gas plasma formed in a gaseous blend made up predominantly of a mixture of oxygen with a saturated alkane chosen from the group consisting of methane, ethane and propane. Diagnostic test strips made with the surface-modified wicking material, and containing an immobilized reagent means for analysis of an analyte in a physiological fluid, show improved performance in terms of increased accuracy, finer precision of analyses, reduced time of analysis, a smaller fluid sample size requirement, and improved compliance with manufacturing standards resulting in lower manufacturing costs. blood sugar determinations.